APRIL, MDCCCLXV.

THE ZOOLOGIST:

A

POPULAR MONTHLY MAGAZINE

OF

NATURAL HISTORY,

AND

JOURNAL FOR RECORDING FACTS AND ANECDOTES

RELATING TO

QUADRUPEDS, BIRDS, REPTILES, FISHES, MOLLUSKS,
INSECTS, WORMS, ZOOPHYTES, &c.

THEIR HABITS, FOOD, RETREATS, OCCASIONAL APPEARANCE,
MIGRATIONS, NESTS AND YOUNG.

No. CCLXXXIII.

LONDON:
JOHN VAN VOORST, PATERNOSTER ROW.

Price ONE SHILLING.

APPEAL.

My Subscribers are well aware that a considerable alteration has taken place
'Zoologist:' owing to an influx of contributions exceeding the limits to which I
restricted that journal, I was compelled to eliminate and publish separately a
portion of such papers as were purely entomological. The new journal was
the 'Entomologist,' and, containing but half the number of pages published
in the 'Zoologist,' was issued at half the price.

'The Entomologist' has been a decided success: such a medium of
tion has long been desired by Entomologists, and the most influential among them
repeatedly urged on me the necessity for this step. About one-third of the
to the 'Zoologist' immediately became subscribers to the 'Entomologist;' and
these, being interested solely in Entomology, ceased to take the more expensive
at the commencement of the present year. This was anticipated: and a verified
pation is no cause of complaint. Nevertheless the loss of old subscribers is
be deplored, and the desire to recruit their ranks must be admitted on all hands
natural and legitimate.

But a new movement seems to have sprung spontaneously into existence at
identical moment when such an auxiliary was desired: monthly reports of
occurrences are now regularly transmitted from distant parts of the kingdom,
with Shetland and ending with the Land's End, thus constituting the most
indeed the only, chronological record of Ornithological events that has ever
projected. The importance of this movement cannot be over estimated: it is,
desirable for me to observe that great care and exactness in drawing up these
absolutely necessary: the very pith of a record may be lost through the simple
of a date. These monthly reports will infallibly hereafter constitute the source
future Natural Histories of British Birds, and future editions of standard
logical works, must be derived.

Under these circumstances I most earnestly appeal to British Ornithologists,
only to join the ranks of contributors of such reports, but to do all in their
promote the sale of the 'Zoologist' among their Ornithological friends. Advertising
a very imperfect way of attaining the object: advertisements are now so numerous
form so vast a proportion of our daily and weekly literature that few take the trouble
search among the heterogeneous mass: it is only by personal solicitation that the
can be attained; and surely it is no great favour to ask of a friend who may
kindred love of birds, or other objects of Natural History, that he incur an
Twelve Shillings a year in such a cause. Let me entreat my present
adopt this course; let each persuade one friend to join our ranks, both as subscriber
contributor, and the result will be equally satisfactory to all.

EDWARD NEWMAN.

Papers with the following signatures still remain in hand:—W. Jeffery,
John Dutton, Henry Rogers, James Dutton, Arthur P. Morres, Charles W.
E. H. Rodd, Henry Doubleday, H. Hadfield, J. W. May, H. Ecroyd Smith,
Hodgson, Richard Tyrer, C. B. Wharton, H. W. Newman, T. Bell, G. F.
Henry Birchall.

On the 1st of June it is intended to publish a DOUBLE NUMBER
Two Shillings), which, it is hoped, will leave no arrears.

Observations on Coronella austriaca. By Dr. Edward Opel, President of the Zoological Gardens, Dresden. Communicated by the Rev. W. W. Spicer.

The enclosed observations on our newest British reptile will, I think, be of interest to many readers of the 'Zoologist.' I have translated them from a monograph on the subject by my friend Dr. Opel, a distinguished naturalist, of Dresden, Saxony. I have omitted the first half of his paper, as it refers entirely to the anatomy of the Coronella and its osteological characteristics, as compared with those of the common snake. Not being a surgeon by profession, and therefore unskilled in the technical terms employed, I feared doing an injustice to the learned author's remarks.

W. W. Spicer.

Rectory, Itchen Abbas, Winchester, Hants.

Coronella austriaca, *Laurenti.*

(Coluber thuringicus, *Bechst.* C. lævis, *Merrem.* C. austriacus, *Gmel.* Zacholus, *Wagl.*)

It has been stated, but erroneously, that the male and female Coronella vary in colour. The only change that takes place is in connection with the casting of the skin. Immediately after that process the animal appears in its most brilliant colours, the dark markings standing out conspicuously from the bright blue ground of the body. The iris, too (which, as Lenz has justly observed in his 'Schlangenkund,' encircles the rounded pupil of the eye, and is broader and clearer above than below), is then lighted up with a deeper intensity of expression.

The brilliancy of the colours is, however, transitory; they begin to fade within six or seven days. The steel-blue ground is succeeded by a dirty brownish yellow; the black burnished markings become less clear, and the fiery appearance of the iris is dulled, though I never found that the organs of sight were covered by the peculiar bluish veil which precedes the epidermal changes of the common snake. As with all ophidians, when in captivity, the sloughing goes on comparatively slowly.

I have had numerous Coronellas in my possession, and one in particular I was able to make the subject of the closest observation for nearly eighteen months. This specimen, a female, measuring twenty-three inches in length, I secured in the Fürstensteiner Grund, not far from Salzbruner (Silesia) on the 16th of August, 1857. In spite of its being closely packed in a tin case, which I carried for entomological purposes, I brought the animal to Dresden, after a journey of eight days from the time of its capture, in good health and without any signs of exhaustion. The ground colour of this animal was of the yellowish hue which usually precedes the casting of the skin: that process accordingly began within four days, but went on so slowly that more than once I assisted nature by removing the epidermis with a pair of pincers. From memoranda made at the time, I find, that the colouring of the new skin was by no means so bright and fresh as usual; and I see in this circumstance a confirmation of an opinion, which I have elsewhere expressed, that the pigment layer contributes largely towards the formation of the epidermis, and is itself renewed from within; for my snake, not having touched food for a long time previous to its sloughing, it follows that the vital operations were weak, and the secretion of pigment weak in proportion; hence the dullness of the colours beneath the epidermis.

Hybernation interrupted the casting of skin that should have followed, and it was not until the 18th of June of the ensuing year (1858) that the process occurred again; but this time it was both easier and quicker, the whole being finished by the 20th of the same month, as I had taken the precaution of having a number of rough objects placed in the cage for the animal to rub itself against. I should mention that the cage in which the Coronella was confined was provided with glass sides and bottom, so that all its movements could be carefully observed, without the animal itself being disturbed.

A third sloughing (the second of this year) took place on the 2nd of July, the Coronella having repeatedly taken food a fortnight previously. This time I allowed the animal a certain amount of freedom, having turned it loose in my study, to see if the process would be thereby facilitated. I noticed that it took advantage of every rough spot it could reach to rid itself, by rubbing, of the dried integuments with which it was encumbered. When about half the body was freed I observed it creep rapidly on to the support of a small round table, and then, insinuating itself with much exertion into the interstices of the wooden arched foot, in an instant it left its epidermis hanging in the narrow space. The whole affair, from the first splitting of the skin on the head to a complete renewal, occupied just three hours and a half. Owing to the continuous friction the cast skin was torn in several places, whereas, in the previous instances, it had come off entire.

The last sloughing commenced on the 14th of August, and proceeded just as quickly; indeed the animal became more than usually brisk after it, for it swallowed a small lizard the same day, and another larger one two days after.

I have besides repeatedly watched the casting of the skin in other specimens, which I have captured for anatomical purposes. There can be no doubt that, in the wild state, the first sloughing commences in April, as I myself observed in a specimen taken in that month; but in captivity this early sloughing does not seem necessary to the animal's well-being.

Immediately upon losing its skin follows a desire for food; at the same time the prisoner makes numerous attempts to escape, and is altogether restless and excited, though at other times it lies quietly in a corner of its cage. It is singular that Lenz, who possessed a perfect menagerie of ophidians, was never fortunate enough to see the Coronella take its food. I can affirm that the spectacle is exceedingly rare, for in one only of my numerous specimens have I observed the act, though in that one repeatedly. Wyder states that "the Coluber austriacus devours small lizards, round which it twines itself, crushing them after the manner of the great tropical serpents. Sometimes it seizes its prey by the tail, and if the latter breaks off it is swallowed at once. In captivity lizards are preferred to any other description of food." I can fully confirm this statement of Wyder. The animal, whose sloughing I have described above, is the only one I ever saw take its food. The first instance occurred in this way:—In the year 1857 I was in possession of such a number of snakes of various species that I was obliged to place my Coronella from the Fürstenstein Grund in the same cage with a blindworm (*Anguis fragilis*), which had been there for some time already. The two appeared to be good friends, and took no particular notice of each other. Both passed into their winter sleep as the cold came on, and, with the return of spring, again woke up and shared the cage in peace, coiled up together on the side where the sun's rays struck warmest. The Anguis ate freely of the earthworms offered to it, though all attempts failed to induce the Coronella to take any food. Small lizards placed near it were allowed to crawl away without notice, and even young mice were disregarded. One morning (May 9) I observed a great commotion in the cage. At this time the Coronella had not cast its skin, nor had it eaten anything for nearly nine months. The blindworm was striving to escape the fixed gaze of its companion, which was following it all over their prison. I placed some fresh water in the cage, and just at that instant the snake threw itself with irresistible force upon the blindworm, fixed its teeth into its head, and, flinging fold after fold of its body round its victim, held it in a vice-like grip, exactly after the manner of the giant serpents of the tropics; so tightly indeed did it embrace the unhappy blindworm that the contents of the latter's intestinal canal were violently forced out and scattered over the glass sides. Each desperate struggle of the blindworm was followed by a closer grasp on the part of the Coronella, which looked exactly like a roll of tobacco, through which the extreme end of the blindworm's tail protruded.

The act of swallowing was very slow at first. Every contraction of the muscles of the throat and jaws was accompanied by a lateral movement of the head, the hooked bent teeth, first of one side, then of the other, catching a fresh grasp of the victim, and gradually drawing it in. The process of deglutition began at 9.30 A. M. and was not completed until 12.45. The blindworm was eleven inches long. The head alone occupied more than an hour. Even at one o'clock, when the Coronella opened its jaws wide, which it continued to do repeatedly after taking its food, I could still see the end of the blindworm's tail. The fact was it was too long to be taken in entirely, and therefore gradually slipped down, as the portion first engulphed was digested. After the meal was quite finished, the Coronella sought out the water, and seemed to take great pleasure in bathing, remaining in it for an hour at a time, no doubt to mitigate the great heat generated by its wonderfully active digestion.

After the sloughing of the 2nd of July I placed two blindworms in the cage; one was eleven inches long, the other six inches and a half. The animal looked steadfastly at them for awhile, made a few movements, and at once attacked the smaller of the two, killing and swallowing it, exactly as it had done the first one. The crushing process was in this instance more complete, because the prey was smaller and unable to offer any opposition. The swallowing occupied two hours and a half. On the 11th of the same month (that is, nine days later), the other was devoured. In its first assault on this one the Coronella missed its aim: immediately it drew back its head, raised it aloft, and then delivered a second stroke with incredible swiftness. The period of deglutition was four hours, from 5 P. M. to 9.

In order to see how it would set to work with a lizard, I placed a middle-sized Lacerta agilis in the cage on the 22nd. The Coronella attacked the little animal, but the latter managed by biting and twisting to throw off its opponent, upon which it seized the lizard by the tail, which instantly broke off: without troubling itself, for the moment, about the owner of the tail, the Coronella gulped down the disjointed member, which was struggling actively, in consequence of muscular irritation, and once more started in pursuit of the maimed lizard. Again it failed in securing it properly, but caught it by the back of the head, and began swallowing it from there. As the hinder extremities were much broader than the fore part the act of deglutition took a considerable time, very nearly five hours, during all of which the lizard was alive, and active too, for it bit the snake internally, and compelled it at last to coil itself round, and so swallow the remainder. For some reason or other, perhaps from fatigue, it will be observed that the animal, in this instance, departed from its usual habit of twining itself round and strangling its prey; but I am certain that it does so destroy lizards before swallowing them. In fact, it was in this way that it killed the small one which was devoured on the 14th of August, one of the days on which it cast its skin, as mentioned above.

From this time to the day of its death, which occurred in March, 1859, the Coronella ate nothing more, though tempted with a variety of food: frogs, newts, &c., remained unnoticed and untouched. In this respect it differs from Tropidonotus natrix, whose diet consists mainly of these last-named animals, while it rejects lizards and blind-worms, or at least devours them only when pressed with hunger. Neither has it ever fallen to my lot to observe in the Coronella those peculiar convulsive movements of the muscles, caused by excessive irritation, which are not uncommon in Tropidonotus; nor, again, the ejection of the prey which it has once swallowed. In fact, I imagine, that this last circumstance never occurs with Coronella, owing to its slowness of deglutition and rapidity of digestion. The latter, indeed, is so active that I have known the portion of the prey enclosed in the stomach to be in a state of decomposition, while the other portion was still outside the jaws.

The crushing of its prey in the folds of its flexible body, previous to devouring it, is a necessity with the Coronella, as appears by a reference to the anatomy of its skull. So slight are the powers of expansion in its jaws that they may be considered as entirely wanting, when compared with its relative, Tropidonotus, nor has the skin the extraordinary elasticity which the latter enjoys. The structure of the Coronella might, therefore, be called imperfect, but that Nature, if she limits on one point, invariably makes compensation on another. Hence the singular flexibility of the Coronella's vertebral column enabling it to compress its prey and prevent its escape. Tropidonotus natrix has not this advantage, but then its jaws open widely and the skin stretches to the very verge of bursting, thus giving it the power of completely enclosing and easily swallowing its victim; whereas the Coronella, if it could not enfold its prey, would be unable to hold it when seized, or effectually to resist its struggles. Should it be said that the viper has the same structure of the skull with the Coronella, and yet never crushes its prey, it must be remembered that, before deglutition, it invariably inflicts a fatal wound by means of its poison-gland; it can therefore afford to wait quietly until the venom has done its work, without the necessity of holding its victim either in its jaws or in the folds of its body.

As I observed just now, the Coronella bathes frequently and for long periods after each meal, either swimming on the surface or lying immersed. In either case it takes great care not to dip its head, excepting in very warm weather, and then, if the water be fresh, I have known the animal sink its head beneath the surface and retain it there for a quarter of an hour at a time, its cheeks all the while puffing out and again collapsing, like the gills of a fish. To ascertain whether this curious fact has anything to do with the act of drinking, I dissected one of my specimens immediately after it had taken a bath: however, a very insignificant amount of water flowed from the stomach and intestinal canal. That so small a quantity should be contained in the stomach I attribute to the absence of a broad tongue and the stiffness of the jaws. Lenz never succeeded in observing this fact, and had great doubts, in consequence, whether ophidians drink at all—an opinion which has been transferred to other works on the subject, that of Schinz, for instance.

The winter sleep of Coronella austriaca is neither so deep nor so long as that of many animals to which it is nearly allied. In both the seasons of 1857 and 1858 (neither of which, however, was very severe) I kept all my specimens of Coronella, Tropidonotus and Anguis in simple glass boxes, the bottoms of which were strewed with sand and sawdust. Not one of the Coronellas was in the least affected by the cold until it reached a mean of 20° (Réaumur), where it remained for several days; and they woke up immediately on being transferred to a moderately warm room; whereas the blindworms and lizards still continued in a torpid condition. Nor did the Coronellas, like their companions, bury themselves in the sand, but invariably lay stretched on the surface.

As in all the families of more highly organized animals, the characters of individuals vary amazingly. Speaking generally, Lenz is right in saying that Coronella austriaca is irascible and ever ready to bite. (Wagler has, in consequence, named the genus "Zacholus," from the Greek, signifying "irritable.") While the two which I procured from Silesia never attempted to use their teeth, and were particularly gentle, suffering me to take them up, without making any effort to escape, others which I have had in my possession would bite at the finger on the slightest provocation, hanging on by their teeth, and it needed some violence to remove them. A drop of blood generally oozed from the wound, but I never found that the slightest inflammation or other ill consequence followed from the bite. One of my captives, a male, was so exceedingly irritable that the mere approach of any one to its cage would excite it, causing it to raise its head on high, open its jaws to their fullest extent, and utter a low but very perceptible hissing sound. From numerous experiments which I have made I can fully bear out the opinions already given by many naturalists, that neither mammals nor birds are in the least degree affected by the bite of the Coronella.

The vitality of C. austriaca is one of its leading characteristics. In the autumn of 1858 I was obliged to be absent from home for five weeks. As I had no one at that time to whom I could safely entrust my pets I determined to take them with me. I therefore packed them into a vasculum, which was attached to a knapsack, and used by me for collecting botanical specimens; and in this they travelled the whole time I was from home. They were not in the least affected by the close confinement to which they were subjected, but returned to Dresden with me in safety and good health.

With the exception of one or two, the whole of my specimens eventually came to an unhappy end. As winter came on, hybernation commenced as usual. Unfortunately, during my absence on a fortnight's journey, a large fire was lighted in the room in which their cage was placed. Aroused by the heat, the vitality of the famishing animals gradually exhausted itself, and within a few days they were all dead.

I can say very little with regard to the propagation of this species. At the end of August the female lays a number of eggs of a whitish colour, seven-tenths of an inch in length, from which emerge the fully developed young; these are at first of a yellowish white, but in a few days turn to a darker colour.

The Coronella austriaca appears to be widely spread, but to be nowhere so frequent as Tropidonotus natrix. For a home it chooses, in preference, rocky ground overgrown with wood, secreting itself among the stones and thick moss. According to Lenz, it is also found in peat moors, as proved by two specimens brought to him from Clausthal; but I should be inclined to think that these had wandered into the moor from the neighbouring woods. As regards Saxony, it occurs sparingly in the Rabenauer Grund, in the so-called Saxon Switzerland, and in the Erzgebirge; but appears to be entirely wanting in the Lusatian mountains. It is frequent in the Thuringian Wald, the Riesengebirge, the Henscheuer and Glatzergebirge.

EDWARD OPEL.

Snakes in New Granada.—It perplexes me how to go to work about the night-catching business. Snakes are too abundant to render marching in the dark about bushes, &c., pleasant. "Latet anguis in herbâ," with a vengeance, here. In one corner of the green box you will find the poison-fang of one fellow I extracted, as a sample of the breed, name unknown. At the Mine, I have no doubt, multitudes of moths would be forthcoming, as it is in a deep ravine with thick forest on the sides and our working stream at the bottom: it is there we catch everything almost. But at night, except on beaten paths, one dare scarcely venture, and there are no bare tree stems for "sugaring;" must try posts and felled trees, I suppose: am going to have a trial anyhow; also at "lantern work." But, so far as I have yet tried them, neither sugar nor lantern has much attraction, perhaps because not tried in the woods, which I dare not do for fear of the snakes. The venomous snakes are not numerous; one may live years without seeing one; but they are still sufficiently frequent to give one a nip in the leg the first time one goes poking through the brush, which accordingly no one thinks of doing. I have not come into any danger, though, on horseback, I have frequently slain the vermin with my whip. Down in the plains they have rattle-snakes, but they are not to be feared, provided you do not absolutely tread on them: they are stupid and easy to settle. I was hunting for a bit of rope, not long since, in a case which was with a lot more empty in the corridor, when out walked a snake five feet four inches in length, which we slew.—*Henry Birchall, in a letter to his brother, Edwin Birchall, Esq.*

Collecting Bogotà Papilionidæ.—Let me first explain, what none of you seem to understand, that to talk of the insects that are sold in Europe as being from the "Bogotà district," is about as rational (or rather much less so) as to speak of a collection of British insects as being from the "London district." Whatever is found goes, as a rule, to the capital for sale, and thence to Europe; but the Bogotà district itself, so far as known, is poor. Nathalis Planta, Colias Dimera and a dark brown Hipparchia are the principal butterflies. Bare swampy plains and barer stony hills are not prolific of butterflies generally. Woods there are none, scarcely any trees, and of rich underwood there is none either. Riding over the plains, I found Nathalis Planta in extraordinary abundance: I dismounted two or three times, and secured a few, by way of impressing them with the fact that there was "a chiel amang them takin' notes:" they seem to enjoy nothing but high winds, and are always having their wish gratified, for it seems always to blow on these plains outside Bogotà. I took a walk a few days since, with net in pocket, and had another interview with Nathalis; but shall try and secure you a box of duplicates, and so settle the question of the rarity of this species for the future. A few Colias Dimera I have also taken for you; they are abundant, but many are out of condition—a day or two, perhaps, suffices to do this, as the fellows fly like Tam O'Shanter before Cutty Sark. You tell me at least a hundred species of Papilio are known "from Bogotà." Nothing very alarming in that, if I have sent thirty-six species. How many single collectors have done more, and how many have contributed to the hundred I should like to know. The Papilios are the hardest to catch, and far from abundant at any time or place. What would interest me to know would be, how far my five hundred species represent proportionally the whole number known from New Granada; that is, whether the several classes or orders are in fair proportion to each other, or if the list indicates that I have looked chiefly to any particular class: I know the butterflies do not think so. There are some fellows I do not often trouble, such as Heliconia Erato: he is a fellow who knows he is common, and is always poking his nose in, secure in his worthlessness, and hoping to call you off from better game. You fancy I do not worry the whites, do you? eighty-one species of Pieridæ cannot be very bad.—*Henry Birchall; Bogotà.*

Description of the Larva of Ennomos fuscantaria.—The larva may be generally described as elongate, with the true legs well developed, the third pair being sometimes of large proportions, and with two anal points. The variety which I first set eyes on gratified a crotchet of mine, inasmuch as it resembled the leaf-stalk of the ash, from which tree I beat it. In figure it was smooth; in colour it was green on the back, with a subdorsal stripe of yellow; the spiracular stripe, primrose-yellow, reaching to the mouth, and bordered above with deep green, which became lighter near the subdorsal line; the belly apple-green; two little warts on the 12th segment; the true legs black, ventral legs tipped with crimson-brown, and the anal legs green. This I thought was the invariable pattern of E. fuscantaria, but last summer Dr. Knaggs sent me six larvæ to rear for him, and I found that at their last moult some of them developed an entirely different appearance; to wit, the ground colour was reddish gray, slightly mottled with greenish; subdorsal yellow stripe scarcely visible; spiracular line rather greener than the ground colour, and becoming yellowish from 2nd segment to the mouth; across the 3rd segment was a row of red-brown warts, the largest being on the sides; large transverse red humps on 6th and 9th segments, and a very small one on 8th and 12th; lateral red warts on 5th, 6th and 7th, and a ventral hump on 7th; pale lateral warts on 10th, 11th and 12th; the true legs crimson-brown, the third pair being very large. And Mr. Doubleday sent Mr. Buckler another larva, which appears intermediate between these two. It was nearly smooth, the ground colour a pale apple-green, subdorsal and spiracular lines yellow, but not clearly defined; the last five segments suffused with pink; two small red spots placed on a swelling at 7th segment; two dorsal warts on 12th; small lateral warts on 10th, 11th and 12th; on 3rd segment a short red-brown stripe running backwards from the spiracles to middle of the back.—*Rev. J. Hellins, in 'Entomologist's Monthly Magazine,'* p. 187.

Description of the Larva of Nonagria Typhæ.—Larva elongate, brownish ochreous; head reddish brown, a shining plate of the same hue on the 2nd segment; two fine dusky lines run down the centre of the back to the posterior segment, which is dark brown. There are two pale ochreous stripes along the sides, and below them are placed the black spiracles; belly and prolegs paler; the anterior legs whitish, tipped

with dark brown. Feeds on the pith within the stem of Typha latifolia (reed mace), is full fed in August, and about the end of the month changes within its abode to a long dark brown pupa, the tail of which is attached to the upper portion of the excavation, the head thus hanging downwards, and being one inch and a half from the hole in the outer rind, through which the moth emerges in the following month.—*William Buckler; Emsworth, Hants, in 'Young England,' March*, 1865.

Notes on the Wild Cattle at Cadzow.

By EDWARD R. ALSTON, Esq.

MUCH interest is attached to the various herds of wild white cattle (the Bos scoticus of Swainson) which are still preserved in a few parks throughout Britain, and some valuable information might be collected were any readers of the 'Zoologist' who live near such cattle to favour us with notes on their habits. Several valuable accounts have appeared of the famous herd kept at Chillingham by the Earls of Tankerville, but of the other breeds little or nothing has been published. Having frequently visited those preserved by the Dukes of Hamilton at Cadzow (close to Hamilton), and having received much information on their habits from the keeper, Mr. Haliday (a most trustworthy observer), I have made the following notes upon the subject.

Lord Tankerville, speaking of the Cadzow cattle, in a letter read before the British Association at Newcastle in 1838, says, "They have no beauty, no marks of high breeding, and no wild habits, being kept, when I saw them, in a kind of paddock." However this may have been in 1838, the case is widely different now. The cattle have the range of "Cadzow Forest," an extensive park studded with grotesque old oaks, and believed to be one of the last relics of the great Caledonian forest which once stretched from the Clyde to the Tweed. Judging from the published accounts of the Chillingham cattle, they would not seem to be wilder in their habits than those at Hamilton, and as to appearance a more beautiful, or (to use an expressive word) a more thoroughly *game*-looking animal than an old Cadzow bull can hardly be imagined.

The wild cattle at Cadzow differ from the Chillingham breed in having the *ears*, as well as the muzzle, hoofs, pasterns and tips of the horns all jetty black, whereas the latter have the ears *red;* according to Lord Tankerville, however, many of the former Chillingham cattle had black ears, as was also the case with those at Burton-Constable, in Yorkshire. The rest of the head, body and limbs are creamy white, purer in colour in cows and calves, and deepening almost to a light dun on the neck and shoulders of the old bulls, some of which are also marked with a few black flecks on the fore quarters. The horns are very uniform in their bend and direction, but are longer in some examples than in others. In form the bulls agree well with Bell's spirited woodcut of one of the Chillingham breed; in some individuals the dewlap is very much developed. The hair of the fore quarters is coarser and shaggier than in the domestic breeds; but the bulls, both here and in England, have lost the mane which tradition ascribes to the original "mountain bull," and to which Scott alludes in his 'Cadzow Castle:'—

> "Fierce on the hunter's quiver'd band
> He rolls his eye of swarthy glow,
> Spurns with black hoof and horn the sand,
> And tosses high his mane of snow."

The calves are hidden for some days after birth in thickets or among long braken, and if any one is rash enough to meddle with them the whole herd rush to the rescue, and a hollow oak of enormous size is pointed out in which intruders have more than once found refuge from such an attack. Here, as at Chillingham, a few badly marked calves are born every year, and it is curious that these are almost invariably *black* or *black and white*, brown ones being hardly ever found.

Mr. Culley, quoted by Prof. Bell, describes the Chillingham cattle as galloping round a stranger in a gradually decreasing circle, but this habit is not noticed by Lord Tankerville, nor is it observed at Cadzow. Generally the cattle stand motionless for some time, gazing at the intruder with a wild distrustful stare, very different from the confident and peaceful look of domestic oxen, then they usually move slowly off, the old bulls being the last to retire. Sometimes, however, they are in different humour, advancing with an air which makes the observer glance at the distance betwixt him and the nearest fence. When the bulls are separated from the cows, which is now done every year, they become much excited, and charge with great fury. On such an occasion, a few years ago, a young bull rushed at the head keeper, who was on horseback, threw horse and rider to the ground, and gored the former severely in the flank. Fortunately the horse regained its feet and galloped off pursued by the bull, thus giving the rider an opportunity for escape.

The Cadzow cattle feed in the morning and evening, basking in the sun or chewing the cud during the middle of the day. In summer they graze from about 6 P. M. until dark, and again at dawn; in winter they commence feeding early in the afternoon, and are observed to keep to the same hours with great regularity. They are of very slow growth, the two-year-olds hardly seeming larger than ordinary year-old calves. The bulls never reach any great age, which is owing to their fierce battles for the mastership of the herd, an honour which a bull seldom enjoys long without being wounded by some younger rival, and when this happens the whole herd set upon their late tyrant and soon despatch him.

Most of our best zoologists seem now to agree in considering the wild white cattle to be of the same species as our domesticated oxen; but whether they are merely tame animals returned to a state of nature, or are the descendants of a truly wild race, will probably always remain a subject of dispute, and unfortunately nothing is known of the history of the breed which tends to settle the question. Fitz-Stephen, writing in the reign of Henry III., states that wild bulls (*Tauri sylvestres*) inhabited the forests around London; and, according to Speed, the wife of King John received a herd of white cattle with red ears from Brecknockshire, but whether these last were tame or wild is not stated ('Penny Magazine,' No. 425). Also at the famous installation feast of Neville, Archbishop of York, in 1466, six wild bulls were included in the bill of fare.

The following list of parks at which these cattle are or have been kept, may be of interest, and probably others of the readers of the 'Zoologist' may be able to add to the number:—

1. Cumbernauld, Dumbartonshire, which formerly belonged to the Hamilton family; the breed is now extinct. ('Statistical Account of Dumbartonshire.')
2. Cadzow, Lanarkshire.
3. Dunnlarry, Dumfriesshire. Existed at the close of the last century, but gradually became extinct. ('Penny Magazine,' No. 425.)
4. Chillingham, Northumberland. The cattle were about eighty in number in 1838. (Lord Tankerville's Letter, 'Athenæum,' No. 565.)
5. Burton-Constable, Yorkshire. Were larger than the last-mentioned, had the ears, muzzles, and *tips of the tails* all black; destroyed by sickness at the end of the last century. (Bewick's 'Quadrupeds.')
6. Gisburne Park, Craven, Yorkshire. "Formerly inhabited waste land in the neighbourhood of the park." ('History of Craven,' quoted by Prof. Bell.)
7. Lyme Park, Cheshire. Different from the Chillingham breed in colour and in every respect. (Lord Tankerville's Letter.)

8. Chartley Park, Cheshire. Resemble those at Chillingham, but have black ears. (Id.)

A series of careful experiments on the breeding of these wild cattle with the domestic race has long been desired by naturalists, but has, I believe, never yet been made. Such an investigation would probably place their specific identity with Bos Taurus beyond a doubt.

EDWARD R. ALSTON.

205, Bath Street, Glasgow,
March 3, 1865.

Bats flying in Mid-winter.—If your correspondent Mr. Wharton will do the 'Natural History of Quadrupeds' the honour of consulting it, at page 24, he will find some remarks on the appearance of the Pipistrelle, even in mid-winter, which may perhaps interest him.—*Thomas Bell; The Wakes, Selborne.*

Otter near Salisbury.—Since my last notice of these animals (Zool. 9430), another has been killed in this immediate neighbourhood: it was a fine male, weighing twenty-one pounds. He was trapped on the 23rd of December, 1864, in a meadow at West Hornham, about a mile from this city. This is the fourth, to my knowledge, that has been killed here this season.—*Henry Blackmore; Salisbury, February* 25, 1865.

Common Hare.—I can corroborate Mr. E. R. Alston's observations (Zool. 9430) respecting the colour of hares this season. I have noticed several which have been killed in this neighbourhood that quite agree with his description; one in particular which differed so much from the usual colour, being of a silvery gray shade, with light face, that the dealer into whose hands it came had it stuffed: its colour could not be attributed to age, as it was a young hare, and was shot about three months ago at Clarendon, near Salisbury.—*Id.*

Common Hare.—In the 'Zoologist' for February (Zool. 9430) I see a question by Mr. E. R. Alston concerning the peculiar colour of the hares this winter. I had one sent me about three weeks ago by a friend who thought I might like it for stuffing on account of its peculiar colour: it was unusually white all over the face, and its hind quarters were of a silvery gray; it was a young hare, weighing about five and a half pounds.—*Arthur P. Morres; East Hornham, Salisbury, February* 18, 1865.

The Sloth.—If I had observed that patch on the sloth's back a few years ago I could have managed to make something out perhaps: I did not notice it in the one of which you have a drawing; that one was a female, and brought forth a young one whilst in my custody; certainly she did not carry it on her back, but in her lap. The only thing that occurs to me as requiring explanation, without seeing it, is the habit these beasts have of sitting in the fork of a tree, as represented in the drawing aforesaid. Can the leaning against a bare branch produce the effect in question? Not very likely, I think, to be the true reason. I have given orders for the purchase of any sloths that may appear for sale, and will investigate; but they are awkward animals to find out about, being chiefly nocturnal. Nevertheless, when the young one is older, it appears to me that the most convenient place would be the mother's back, with its long arms round her neck, and legs round her waist.—*Henry Birchall.*

Ornithological Notes from Shetland. By H. L. SAXBY, M.D.

(Continued from page 9489).

DECEMBER, 1864.

Turnstone.—At this season turnstones frequent all parts of the coast, associating with ringed plovers and purple sandpipers, but usually in small numbers. More than half a dozen are seldom seen together, but during the rough weather of the last few weeks a great number collected upon the sands in Balta, where they still seem inclined to remain. When turnstones are in company with other species they are more easily approached than at other times, but after having been fired at they become very suspicious, and for weeks afterwards it is difficult to get within shot upon open ground. On being disturbed they nearly always utter their loud twittering notes, and invariably fly seawards, seldom alighting until they have several times passed and repassed the selected spot. When wounded they swim with great ease, and will even take to the water voluntarily when closely pursued, but I have never yet seen one attempt to dive. It is a matter of surprise that so careful an observer as Macgillivray should have regarded "their alleged stone-turning habits as a fable." I have watched these birds for hours at a time, and besides witnessing the act repeatedly, have afterwards visited the ground, where the displacement of stones and shells, and even the completely reversed position of some, have been quite sufficient to prove the existence of the habit in question. Such traces are of course most readily observed upon a sandy beach where the stones are few and scattered, and upon masses of drifted weed the wet appearance of those portions which have lately been disturbed are very evident; indeed it is chiefly among seaweed that this peculiar method of searching for food is employed. Although this bird mostly frequents rocky shores, the sands, during stormy weather or immediately afterwards, appear to be very attractive.

Jack Snipe. — Jack snipe are unusually abundant this winter. Although they are to be met with in most spots which are frequented by the common species, they are solitary in their habits, so that two are not often seen upon the wing at one time. Sometimes, when a marsh has been well explored and every common snipe has been flushed, a jack snipe will spring up from a small tuft of grass or from a hollow in the ground, and even then not until it is almost beneath one's feet.

Common Snipe.—In consequence of the openness of the weather, a large proportion of the snipe remained in the hills until the snow, which commenced about the end of December, drove them to the low grounds. Now there is not an open spring in this neighbourhood at which one or more may not be found. I have again paid several visits to Balta, where the greater part of the large flock of snipe which I have previously mentioned still remains. When they are assembled in this manner very few can be shot, for the first one which rises is sure to alarm all the others, the spot in which they lie being of very limited extent. Their first flight is always directed towards the shore, where they alight among the rocky pools; but a second alarm drives them seawards, most of them disappearing in the direction of the hills, and all flying high, only a few returning to the island. Snipe are often to be met with upon the shore at low water, but this chiefly happens in frosty weather. One nearly calm evening, about a fortnight ago, as I was sailing home close in shore, a little after sunset, my attention was attracted by the slight movement of some object upon the top of a large rock above me, and upon the nearer approach of the boat the form of a small bird became dimly visible against the sky. As it crouched among the seaweed with the head depressed and the tail considerably elevated, the apparition was a little perplexing, and in consequence of my hasty assertion that it was some rare species of sandpiper quite new to me, my companion fired and killed it; but on the discovery being made that he had simply murdered an unlucky snipe, his mortification was only equalled by mine at my faulty Ornithology.

Longtailed Duck.—The large number of shags which have been attracted to the coast by the enormous shoals of sillocks, are again causing a scarcity of longtailed ducks (Zool. 9127). Nearly all that I have seen this winter have been adult males, swimming in deep water, but not one, either old or young, has yet fallen into my hands, although in former years I obtained many specimens. Even under the most favourable circumstances it is by no means easy to shoot these birds. They seldom allow a boat to row up to them, and although under sail one may run up within forty yards or less, they will in most instances manage to escape by diving. Sometimes they take wing instead, and then they are easily shot; but it is almost useless to attempt to hit them as they sit in the water, so expert are they in diving to the flash.

Merlin.—Merlins are much less numerous here in winter than at other times of the year, and those which I have shot at that season have all been old birds. Adult males have the cere, tarsi and feet deep gamboge-yellow, tinged more or less with orange; but in all the young birds and adult females which I have examined, those parts have always been pale sulphur-yellow.

Gannet.—About the middle of December a heavy southerly gale brought a large number of gannets to Baltasound and Haroldswick, but they only remained for a few days. They never breed here, although they visit our coasts with some regularity soon after the close of the breeding season, but only a very few remain during the winter. Several instances have occurred in which these birds have been caught, as they sat upon the water, so gorged with food as to be unable to escape.

Razorbill.—Razorbills are very seldom seen here in winter. I shot one at Baltasound on the 17th of December. It was a female, and among other signs of adult age it had the bill perfect in form and grooved upon the sides, one of the grooves being white. The throat and the remainder of the under surface were white; in short, the whole plumage was in every respect similar to that which is described by various authors as peculiar to this species in winter, with the single exception of there being *no* white line between the base of the bill and the eye. I am at a loss to account for its absence, for, so far as I am able to ascertain, such a mark becomes apparent even in young birds soon after they leave the rocks, and is distinct during their first winter. Without any wish to "make a mountain of a mole-hill," may I beg that those of my readers who can give me any information upon the subject will kindly do so, my object in making this request being to throw some light upon the long-disputed question as to the right of the "ringed" guillemot to rank as a distinct species simply on account of the white line near the eye.

Lesser Blackbacked Gull.—A specimen of the lesser blackbacked gull was shot at Baltasound on the 20th of December, up to which date I had never seen one in Shetland in winter.

Glaucous Gull.—Rather an unusually large number of glaucous gulls have visited us this season; but most of those which now remain are young birds, nearly all of the old ones having, according to custom, disappeared soon after their arrival. Under ordinary circumstances it is not easy to procure specimens, for although these birds are by no means shy when attracted by carrion, they fly high, and do not, like other gulls, display a wish for a near inspection of every visitor who appears near their haunts. At this time of year, during a smart gale, it is almost impossible to walk for a mile along a lee shore without seeing a few of them sailing above the breaking waves, in readiness to pounce upon anything in the way of food which may chance to be washed up; and upon such occasions they are sometimes so intent in their search as to become almost heedless of danger. Upon the whole they appear to prefer solitude, but they may sometimes be observed assembled in small parties, seldom in large numbers, although I have seen as many as fifty together. This species may be recognized at a considerable distance by its steady soaring flight, and by the wing being less bent at the carpal joint than it is in others of the genus; nearer it may readily be known by its conspicuous white or whitish quills, and in the water it sits more buoyantly than the herring gull, which is sometimes mistaken for it. Owing to the extreme thickness and compactness of its plumage it is seldom killed with shot smaller than BB. I have known one quietly fly away after having received three charges of No. 3, although each one of them knocked out some of the feathers. A "sitting" shot at a glaucous gull is nearly always unsuccessful, and deservedly so, for he who could not hit one flying would be a sorry shot indeed. A few days ago a friend of mine fired at one several times, but apparently with very little effect, until, having received the last charge, it flew for about fifty yards, alighted briskly upon a rock, and after standing firmly for a few seconds, suddenly fell dead. Upon examination I found very few wounds, but plenty of broken feathers, and that one shot had passed completely through the heart in such a manner as to make an opening less than a line in width into the left ventricle. In the winter of 1860-61, when there was a great mortality among the ponies, glaucous gulls were so numerous that one morning I shot four immature birds as fast as I could load, and without going more than sixty yards from the house. Of all those which have been examined by me I have only seen one in poor condition: usually they are so fat as to cause much trouble in skinning. Animal food of any kind is always acceptable to them; but, much to my surprise, I have sometimes found the stomach filled with various species of sea-weed, and this has even occurred when whales' flesh has been abundant. Only a short time ago I took from the stomach of one of these birds sea-weeds of five different species, the greater portion consisting of Alaria esculenta ("honey-ware"), the midrib of which is sometimes eaten by the Shetlanders themselves. So far as my observations go, glaucous gulls are not so quarrelsome, either among themselves or with other species, as herring gulls appear to be, and they feed in company with other birds without seeming to cause any alarm. Sometimes, when food has previously been scarce, crowds of hungry glaucous gulls, herring gulls, great blackbacks, hooded crows, ravens and starlings may all be seen feeding together upon one carcase.

JANUARY, 1865.

Little Auk.—The little auk is by no means common here, and only occurs in winter, after stormy weather. On the 16th of January I obtained a very perfect adult female, and as it avoided two shots by diving I was afforded an opportunity, though a brief one, of observing it closely while living. In its general appearance it reminded me of a small razorbill, but the fore part of the body was not carried so low in the water. The bird allowed the boat to approach within easy shooting distance, and only dived when fired at; but the act took place so rapidly that the mode in which it was performed could not at the time be detected, although subsequently I had an opportunity of seeing that the wings were partly opened at the instant the plunge was made. Unlike those specimens which I have seen in England, and from the Firth of Forth, it was in excellent condition, and the stomach was full of the remains of small fish. Judging from all accounts of the little auk which I have received from many of the inhabitants of these islands, it appears to occur here most frequently in a living state.

Water Rail—Several water rails have arrived at intervals during the last fortnight. I shot one in order to ascertain the nature of its food, and found in the stomach fibres of plants, small stones, and the mandibles of some beetles.

Rock Dove.—Large flocks of rock doves now frequent the open fields, and may also occasionally be seen inspecting the base of a rugged bank by the shore, where the frost has caused the loose earth to fall. It is at this season that their good services become most apparent. In the crop of one which I lately opened there were a few grains of barley, a great many seeds of wild mustard (*Sinapis arvensis*), and nearly five table-spoonfuls of the seed-pods of the field-radish (*Raphanus raphanistrum*). It is very probable that this species breeds much earlier than I supposed when making some notes upon it last year (Zool. 9237), for on examining a pair shot on the 17th of January I found ova in the female rather larger than hemp-seed, and in the male the testes were much enlarged, being three-quarters of an inch in length.

Guillemot.—On the 19th of January I shot the only example of the common guillemot which I have seen here since the close of the breeding season. It was a male, in very poor condition.

Great Northern Diver.—Early in winter the northern diver appears here in considerable numbers, but a large proportion of those which then arrive disappear about Christmas. In April and May they again become plentiful, but among the few which remain throughout the summer adults are seldom seen. In consequence of its extreme wariness and also of its wonderful powers of diving, specimens are obtained with difficulty. The instant it is threatened with danger it sinks beneath the surface of the water and swims rapidly away, seldom emerging before it has traversed a distance of a hundred yards—often much more. When once it has become alarmed, further pursuit is almost hopeless, unless the bird happen to cross the track of the boat, as it will do occasionally, instead of proceeding in a line directly from it. When the bird chooses a favourable course, instead of making off to windward, a boat under sail in a stiff breeze will sometimes overtake it, but such a chance is of rare occurrence. Before its habits were so well known to me as they are now, I used often to pursue it in a four-oared boat, but always unsuccessfully; lately, however, I have been able with only a single pair of oars to get within range. It sinks the body very low as the boat approaches, often so low that the water covers the hollow of the neck, and the chances are that when fired at it will escape by diving, unless, indeed, the favourable moment be selected when the bird turns away its head or rises to flap its wings. Once, and only once, I have seen it take wing when shot at, instead of diving. It appears to me that the main secret of success in shooting it, lies in aiming low and a little in advance, so as to strike the head as it is thrown forward in the act of diving. The mode in which this bird dives cannot easily be explained in words. I have watched it carefully upon many occasions, but always with a most unsatisfactory result; it merely seems to give a slight start (if I may so express my meaning), and disappears in an instant. When wounded in such a manner as to be disabled from diving it is a very awkward bird to handle, and is then so fierce that none but curs and lapdogs should be sent in after it. It will allow the boat to run close up without displaying any sign of activity; but the moment a hand appears in reach there is a sudden splash with wings and feet, and such a thrust is delivered with the sharp bill that if it take effect it will probably interfere with the captor's shooting for some days afterwards. In order to form a just estimate of the enormous muscular power which is possessed by the legs and feet, one should take the bird in hand in a living state; and here I may mention a very conclusive, if somewhat cruel, experiment which was made a few years ago by a gentleman of my acquaintance who resides in this neighbourhood. Having slightly wounded a northern diver, he and a lad who was with him managed to get it alive into the boat, and after having, by means of a piece of stout line, made it fast by the leg to the stem, they tossed it overboard. The poor bird instantly dived, and for many minutes steadily towed the boat seawards, remaining entirely submerged the whole time, except when it rose to breathe. In performing this extraordinary feat it made use of the wings, flying, as it were, beneath the surface, and keeping the neck fully extended. The boat was thirteen feet in the keel, but light for its size, being, like all those which are used in Shetland, built of Norway pine. The northern diver is sometimes observed far out at sea, but its most usual haunts are quiet bays and inlets, and more especially such as have a sandy bottom in which it can seek its favourite food, the common sand-launce (*Ammodytes lancea*). In consequence of the large number of fish which it destroys, and of the frequency with which it drives the shoals from the coast, it is greatly disliked by the fishermen, who, although they usually take but little interest in ornithological matters, never fail to give me a hint as to where I may obtain "a fine immer-goose." Dr. Edmondston informs me that when under water it ploughs up the sand with its bill in order to procure the fish and worms which are concealed beneath it, and the turbid state of the water which may often be observed in those parts where the bird is feeding furnishes a strong proof of this habit; and, in addition, I have repeatedly remarked the worn appearance of the ridge of the upper mandible, and sometimes also of the lower one, near their tip. This bird is not often seen upon the wing during the winter months, but in spring I have frequently observed it flying at a considerable height, circling over land and water, and at intervals uttering loud, hoarse screams. At such times it may easily be known by its long thick neck and by its small rapidly-beating wings, which are situated rather far back. Its most common note bears considerable resemblance to the barking of a small dog; but upon a calm summer's evening I have heard it utter a long-drawn plaintive cry, so strangely unlike any other which is known to me that I cannot even attempt to describe it. In consequence of adult birds having been seen here in summer, several visitors, and among them Mr. Hewitson, have expressed a belief that it breeds among these islands, and there now appears to be some substantial ground for the supposition. Seven years ago I was much struck by the large size of a diver's egg which was sent to me among others from the island of Yell; and soon afterwards, upon my visiting the locality from which it was said to have been obtained, I saw a northern diver in perfect summer plumage, but was unable to shoot it. Although I made a most careful search the next year, neither egg nor bird was found; but the following year, early in July, two more eggs were sent to me, and the man who found them convinced me, by his very accurate description of the bird, that they were undoubtedly those of the northern diver. Since that time no more eggs appear to have been found, although birds have been seen by me in other parts of the island during the breeding season, and chiefly in fresh-water lochs. In answer to my inquiries concerning the nest, the finder of the eggs informed me that they were discovered "lying upon the bare heather" a few yards from the edge of a loch in a remote part of the hills, about half a mile from the nearest salt water. The eggs had been so long incubated that it was impossible to blow them in the ordinary manner, and the method of overcoming the difficulty being then unknown to me, the process caused some little disfigurement. They are all very similar, both in size and colour, being of a dark, warm olive-brown, with a few scattered spots of umber-brown and dusky gray; in length they very closely agree with Mr. Hewitson's figure, but two of them are about a line less in breadth. I am not aware that eggs of the redthroated diver have ever been found of similar dimensions, nor is it at all probable that they can be those of the blackthroated diver, a species which is almost, if not entirely, unknown even as an occasional visitor to Shetland. Upon my return to England, I shall be happy to show the eggs to any person who may feel interested in the matter.

Golden Plover.—The hard weather is driving large numbers of golden plovers to the shore. The black feathers which are peculiar to the summer dress, are already beginning to appear upon the under parts.

Hen Harrier.—The hen harrier still breeds regularly in some parts of Shetland, but it is only a rare visitor to Unst. After the first fall of snow I observed a beautiful male hovering over some twites in a corn-yard.

Goldeneye.—The hard frosts having now closed all the lochs, goldeneyes have been driven to the voes, where flocks of thirty and upwards may now be seen.

Snowy Owl.—Notwithstanding the severity of the weather, no snowy owls have yet appeared. The individual of this species which has now been in my possession for more than seven months (Zool. 9317) has not yet moulted, only a very few feathers (apparently injured ones) having been cast in autumn. He has been gradually becoming tamer, and until lately very little wish to escape was displayed; but no sooner did the snow set in than he became restless, and soon, tearing through the net which was in front of the cage, escaped into the outhouse, where he was discovered standing very contentedly upon a heap of snow which had drifted through the broken door. A few days afterwards he made a second escape, and was again found standing upon the snow.

Herring Gull.—It is difficult to imagine how this weather can affect sea birds, yet there can be no doubt that since the frost set in they have become far more familiar. Herring gulls have been particularly bold lately, and although their natural food is even more than usually abundant this season they are to be seen feeding with the poultry, and occasionally, sweeping by the kitchen-door, they snap up one of the small fish which are hung out to dry. Often, too, they visit the turnip fields, where they commit some damage. I have shot them almost in the very act, and found their stomachs filled with pieces of turnip. It is a beautiful sight to see these birds following a shoal of fish. A single bird thus engaged may be observed sweeping round in wide circles (possibly to avoid overshooting the mark), at about fifty feet from the surface, and with the wings apparently motionless. The signal is well understood, and in a few minutes hundreds of birds collect; but, instead of flying wildly and crossing one another's track, they wheel round in such a manner that, viewed from a little distance, they appear to form a slowly-revolving hollow cylinder, sometimes rather irregular in its form, but often astonishingly perfect; the regularity also with which its diameter contracts and expands is very singular. They may be seen continuing these evolutions as far as the eye can follow them; but their object is a mystery, for no captures seem to be made. Probably they follow the shoal until it comes to a halt in some sheltered place, for when small fish assemble about the rocks in any numbers, and confine themselves nearly to one spot, herring gulls devour them greedily.

Black Guillemot.—As early as the first week of December black guillemots were to be seen, in which a few black feathers were already beginning to appear upon the breast, and during the present month (January) I have shot specimens having fully one half of the number of feathers upon the under parts black. These variations in plumage still appear to be very imperfectly understood, and nothing but constant observation can solve the mystery. The abundant opportunities which I now enjoy may perhaps enable me ere long to supply a few reliable facts as to the changes of plumage which the black guillemot and a few other species undergo at various ages and at different seasons.

HENRY L. SAXBY.

Baltasound, Shetland, January 31, 1865.

Ornithological Notes from Beverley, East Yorkshire.
By W. W. Boulton, Esq.

(Continued from page 9494).

Swift.—Mr. W. Jeffery, jun., suggests (Zool. 9434), "May not the absence of convenient nesting-places have something to do with the scarcity of swifts at Beverley? Have no old buildings been pulled down or repaired?" &c. Beverley, one of the most ancient towns in Yorkshire, presents more than usual inducements for the nidification of this bird. In the belfries of its lofty towers, and amidst the gloomy rafters of its long roofings, corridors and aisles (easily accessible from without), our Minster alone would appear to offer such inducements to an unusual degree: moreover, on the south side, this edifice faces the open country. In the heart of the town stands St. Mary's Church, a very ancient structure; and I find on inquiry that in former years swifts have been observed clinging to and apparently taking up their abode in the massive tower of this church; latterly, however, these birds would seem to have well nigh forsaken us. Referring to Mr. Jeffery's second suggestion, there may be some force in it, for it is quite true that repairs have been going on in both churches, but I think not to a greater extent than has been customary each preceding year, unless, indeed, during the past summer of 1864, when the ceilings of St. Mary's Church were cleaned and painted; but this process did not in any way reduce the facilities afforded in the tower for the nesting of swifts and other birds. The Minster possesses a very rich building fund, to be applied solely to repairs, &c., and thus various alterations and renewals of different portions of the building are continually going on, but certainly not to an extent likely to interfere with the nidification of those birds frequenting the sacred edifice. Indeed the tribe of swallows, sparrows, jackdaws, with an occasional pair of redstarts, that have year by year found places there wherein to build their nest and rear their young, may still be seen in undiminished numbers. No ancient building has been pulled down, nor has any extensive alteration of those still remaining occurred to thus explain the very decided reduction in the number of swifts that have visited the town of Beverley for the last several years.

Jack Snipe.—I never recollect so many jack snipe seen and shot in this neighbourhood as during the present season,—two, three and even five of these birds, in one instance, having been flushed together, or within the radius of a very few yards. I have not observed a proportionate increase in the numbers of the common snipe, but if anything they have been scarcer than in former seasons.

Wild Duck and Pochard.—It is several years since we have been visited by such numbers of these birds as have occurred on and about the River Hull during the present winter. The species have included principally mallard, teal, widgeon, pochard, scaup and goldeneye. The goldeneye, which in ordinary seasons is one of our rarer ducks, has this year been unusually abundant, and several splendid old male birds, in fully mature plumage, have been obtained. In former years we have had several flocks of the tufted duck, and I have always looked upon them as common winter visitants here; this year, however, I have not seen a single specimen: speaking of this duck, I have invariably observed that it is the rarest circumstance possible to obtain a *mature female*, all the birds being males, old and young, with now and then a young female. I have in my collection the only specimen of a mature female tufted duck that I have seen shot on our own river, the Hull. The goldeneyes, on the other hand, are generally young males, with now and then an old female. The widgeons shot on the Hull are usually male birds, either old or young; a really mature female is quite a *rara avis.* The sexes of the mallard and teal are pretty equally distributed. Is it possible that at this season of the year, in some species of ducks, the sexes separate, as in some other species of birds, as, for instance, the chaffinch?

Muscovy Duck.—One evening during the second week of February last, James Bishoprick, of Beverley, brought me a young female of this duck he had just shot. Hearing a rushing noise, as of the wings of a large bird, he started round from where he was standing at his work as a stonemason, and saw a large bird flying swiftly past. It shortly alighted in the neighbouring play-ground of one of our schools. Having obtained permission, he ran for his gun, and, finding the bird still in the play-ground, shot it. No one that I know of keeps the muscovy duck within several miles of Beverley, so that the bird (probably an escaped specimen) must have flown either by stages or at one flight, for a considerable distance. I was aware that the female of this duck possessed considerable powers of flight, but from its long domestication I did not know that it was apt to leave its native yard very far. The male is usually too unwieldy to indulge in extensive flights. My specimen is of a glossy blackish brown colour on the back and shoulders; primaries white; head speckled brown and white, the brown prevailing and extending downwards under the chin for about two inches, at which point it terminates abruptly in a distinct line across the throat; breast and belly white; flanks striated with brown feathers, alternating with the white, and terminating in the uniform white of the belly; beak and legs mottled pink and dark horn-colour; iris hazel.

Smew.—On the 14th of February an immature male of this species was shot on the River Hull. It was sent to Mr. R. Richardson, of Beverley, for preservation, and has passed into the hands of Mr. John Stephenson, also of Beverley. This species is very unusual in the neighbourhood of Beverley.

Rednecked Grebe.—During the past month I have seen three specimens of this grebe in the flesh. One was shot on a private water within a few miles of Beverley, one on the River Hull, and the third off Filey. All were immature females, but the last-named was considerably the largest, longer in the bill and having more yellow at its base and along the sides of the lower mandible; it was also grayer in colour on the breast, but undoubtedly the same species, with the brown of the throat very well defined; still, judging by the state of the ovary, I cannot believe it had ever bred. This species is very rare in our neighbourhood, so much so that I do not remember having previously seen more than a single specimen that had been shot within many miles of Beverley.

Goosander.—I never knew so many of these birds visit our river as during the present season. Several flocks have been seen, out of which five or six specimens have been shot. On the 20th of February I obtained the best-marked old female I have seen, the salmon-colour on the breast being quite as deep in hue as that on the breast of an old male bird, and her crest was unusually well developed. A day or two afterwards Mr. W. Stephenson, of Beverley, obtained a fully mature male of this species. It had been shot on the River Hull by a young farmer, James Runton, of the Leven Carrs. Mr. Stephenson also assures me that another mature male was shot about the same time, but it had been plucked for the table before he secured it, the person who had shot it imagining it was a duck. Mature specimens of the goosander are not often seen in this neighbourhood, although several young birds generally visit the River Hull during each winter.

Swan.—On the 18th of February a young swan was shot on the River Hull, whose species I am puzzled to determine. It is doubtless one of the swans I mentioned in my last notes as having passed over Figham, near Beverley, for these birds have been subsequently observed, three in number, occasionally frequenting the River Hull. Its colour was grayish white, decidedly gray on the head and nape, the gray of the neck and upper and lower tail-coverts being interspersed with white feathers; the under surfaces of the wings, axillary plumes, &c., spotless white. Still the colour would have led me to the supposition that the bird was a young specimen of the common mute swan (*Cygnus olor*) but for the following reasons:—1. The total weight, shortly after it was shot, was only 13¾ lbs., whereas the weight of C. olor, according to Yarrell, is about 30 lbs., and the same author states that young birds of the year nearly reach that weight in October. 2. The legs were slaty gray in colour, and not even approaching to black, as in C. olor. 3. The black around the nostril did not join the black at the base of bill; but there was a distinct space between the two of perhaps about the eighth of an inch. 4. The measurements of the bill and its peculiarities exactly correspond to those given by Yarrell of the Polish swan (*Cygnus immutabilis*). 5. The knob at the base of the bill was very small indeed, certainly not larger than a small horse-bean or large gray pea. On the other hand, I was unable to find the two foramina spoken of by M. Pelerin as situated a little above and on either side of the foramen magnum in C. immutabilis, but not in C. olor. This peculiarity is corroborated by Yarrell (vol. iii. p. 234), who I conceive we must consider an unusually reliable authority on this subject. Still, although I could not find these foramina, and although the colour is more that of C. olor than of C. immutabilis, the smaller size, so very remarkable, the well-marked peculiarities of bill and legs lead me to indulge a hope that I may have obtained a specimen of C. immutabilis. I have given these details purely for the sake of information, as I have had few opportunities of making myself acquainted with the peculiarities of this family, and I am anxious to decide finally, if possible, the true species of my specimen.

Pinkfooted Goose.—The only account I have been able to glean of wild geese passing over or visiting the immediate neighbourhood of Beverley, since my last notes on this subject, I obtained the other day. Mr. F. Boyes, of Beverley, was shooting up the River Hull on the 20th of February, when he saw a flock of geese flying low, but not in his direction. Two shots were fired from other guns, and one bird fell; Mr. Boyes saw it, and reported it to me as a pinkfooted goose. This specimen was sent the next day to Mr. Richardson, for preservation, by Mr. J. Stephenson, who had purchased it. I saw the bird at Mr. Richardson's, and it was a very fine female of this species. I have since heard from a farmer patient of mine, Mr. Curtois, of Hunsley, near Beverley, that several flocks of wild geese have frequented the fields on his wold farm for some time past, apparently coming from the Humber.

Great Spotted Woodpecker.—A mature female of this species was shot in the Burton Bushes, close to Beverley, on the 25th of February, by James Bishoprick, from whom I purchased it. It is very nearly two years since one of these birds has visited our neighbourhood.

Water Rail.—I observe in the 'Zoologist' (Zool. 9468) a notice, from Mr. J. A. Harvie Brown, of the occurrence of this species in Stirlingshire. I was not aware that this bird was decidedly rare in any part of Britain, although, from its shy and retiring habits, it is seldom seen. Mr. Harvie Brown considers it "extremely rare" in the locality from which he writes. I cannot term it a common bird on the River Hull, for in ordinary seasons I have certainly met with fewer examples of this rail than of the spotted crake. In 1863 this was markedly the case, but during 1864 more specimens of the water rail were shot on our river than I ever recollect in a single season, whilst I never saw so few specimens of the spotted crake, which is generally plentiful during the summer months.

Pied Blackbirds.—Three or four specimens of this species, more or less pied, have been lately seen near to Beverley. One has been shot beautifully variegated in its plumage; two are still at large close to the town; and another is often seen near to the village of Leven, about six miles from Beverley.

Black Sparrows.—Mr. H. Blake-Knox, in the 'Zoologist' (Zool. 9467), records the fact of having seen a perfectly black sparrow. At Leven there is a breed of black sparrows; at least, the male birds are the deepest blackish brown, so nearly black as only to be distinguished from that colour when in the hand; the females are a shade lighter. The young of these birds have slaty black down, like that on the body of a black bantam chick. During the past summer three of these birds were sent to me for preservation, and are now in my collection; they were two females and a young one nearly fledged; the old male was shot also, but was unfortunately lost by dropping into the branches of a tree, amongst the foliage of which he stuck, and was never found. I hope to be able to secure an adult male this year, as several have been seen at various times near Leven. I have obtained white sparrows, one pale buff-coloured variety, and many pied specimens, but I never saw black sparrows until those I have mentioned were sent to me.

W. W. Boulton.

Beverley, March 4, 1865.

Ornithological Notes from Lincolnshire. By JOHN CORDEAUX, Esq.

(Continued from page 9449.)

Hooded Crow.—Hooded or graybacked crows are in great force this winter in their favourite haunts, the Humber flats and the adjoining marsh country. They generally arrive on this coast the first week in October; but I have known them, in one instance, appear as early as the last week in September. For some days after their arrival they are far from shy and not difficult to approach, consequently many fall victims to the gunners; they soon, however, learn by dearly-bought experience the range of a gun, and speedily acquire all the wariness and cunning of their cousins, the carrion crows. The wild-fowl shooters on this coast invariably shoot them when they have an opportunity, and I was surprised to find that they also eat them. An old gunner informed me that he considered a "hoody" quite equal, if not superior, to a scaup duck. Possibly their half-marine diet may give them the true scaup flavour; I should decline, however, to make the experiment. Nothing comes amiss to these birds in the way of food: the carcase of a beast washed up on the coast is quite a royal banquet, and I have known them gorge to such an extent on the putrid flesh as to be scarcely able to fly; nor is their attention directed exclusively to the dead animal, for I have seen them hanging about in the vicinity of a diseased and tainted sheep some time before its death, as if aware it will soon be theirs, and should the poor animal become helpless and unable to rise they will speedily hasten the period of dissolution by tearing out its eyes. One which I shot and skinned the other day was exceedingly fat: the stomach contained a quantity of white oats and the broken shells of Cardium edule, and several broken and also some entire shells of a Tellina.

Teal: Escape of Birds by Diving.—Dr. Saxby, in the 'Zoologist' (Zool. 9436) gives an interesting account of the escape of a goldeneye by diving. I recently met with a curious instance of this power of concealment in a wounded teal: one I shot at, on a stream in this parish, fell slightly winged into a narrow ditch; this ditch was a mere shallow run from a little spring, the breadth at the bottom not more than eighteen inches, and with about an inch in depth of water, running over deep impalpable mud, coloured red with iron, and without any floating weeds to obstruct the view. Although I went directly up to the spot, and found the water muddy, I saw no bird: waiting till the water had cleared, I still could find no trace whatever of the teal; and although I closely examined the sides of the narrow runlet, failed to detect its bill, which would probably be protruded somewhere out of sight under the bank-side: the mud at the bottom was apparently undisturbed. Had I not been quite certain of the spot where the teal fell I should have given up the search as useless, but having seen it disappear at that exact spot, induced me to persevere in my search; so, taking out the ramrod from the gun, I pushed it into the light mud of the ditch, and raised it up in the place where I suspected the teal would be, when up came the bird from under the mud and went fluttering down the drain. In this case, from the shallowness of the water, it had not been able to dive, and had thus buried itself completely in the loose mud. I have seen nearly a similar instance of concealment in a water hen: in this case I had walked up suddenly to the side of one of the many circular ponds in this parish, known as "blow-wells," the water of which never freezes even in the most severe winters. These little ponds are remarkably clear, and in the centre, where the spring rises, are of great depth. Just as I stepped up to the side I saw a water hen feeding in the shallows near the margin. The bird on perceiving me instantly buried itself in the light mud, and when the water became clear I detected its bill under a small portion of floating weed. In the same manner as with the teal, I put the ramrod directly under the bird and raised it up; it rose to the surface, went fluttering over the shallows, dived into the deep clear water, and I saw it make its way across the pond and rise again in a bed of reeds on the opposite side. The water was so shallow round the margin of the blow-well that the water hen was unable to dive, and so it instantly adopted the next best course and concealed itself in the mud.

Lesser Redpole.—Observed a lesser redpole (January 11th) busily employed in searching up and down amongst the tall reeds in a marsh drain. I have never seen one before in such a situation. It was very tame, and I was able to approach within a few feet of the little fellow, who exhibited all the graceful climbing propensities of a titmouse.

Stonechat.—I was surprised to see a stonechat on the 12th of November in this parish. I was first attracted by its note, uttered as it sat on the topmost twig of a fence. It is a rare bird in North Lincolnshire, and I have never been able to discover its nest in this neighbourhood. The whinchat is the commonest of our summer visitants.

Widgeon.—Unusually large flights of widgeon, mallard, scaup, and an occasional tufted pochard, have frequented the Humber during December and January. The great haunt of the widgeon and mallard is a particular portion of the fore-shore, closely covered with pools of salt water left by the receding tide. These pools abound with the common grass-wrack (*Zostera marina*). This is a favourite spot for shooting them: the plan adopted for this purpose is to dig a hole in the flats as near as possible to the floating fields of Zostera, and there, completely concealed, to wait for the ducks flying up to their feeding-grounds, which they do just at dusk. I have observed the mallards are generally the first to arrive, and then come the widgeons in small parties numbering from three or four to twenty and upwards. They invariably fly against the wind. It is necessary to sit with your back to the wind. These mud-holes, although dug in the soft "warp," are tolerably dry, and may be made quite comfortable with some matting and plenty of dry grass. I know no more exciting sport than thus waiting for widgeon: the swift rush of the wild fowl past you, their varied cries, and the utter solitude of your position, buried in the dreary mud-flat, make altogether a scene not easily forgotten. A large flock of widgeon which I was watching through a telescope, on the 7th of January, as they sat upon the water, consisted in a great measure of males, as two to one. I am inclined to think that a large proportion of the widgeon which visit the Humber during the winter months are males. I have frequently observed that a much greater number of males than females fall to the gun at the Zostera fields. During the day they may be seen on the water sleeping, with their heads turned back under their wings, the flock keeping well together and not associating with other species. I have frequently watched, through a glass, flocks of widgeons, mallards and scaups in close propinquity, but never intermingling.

Fieldfares and Redwings: Comparative power to withstand severe Weather.—It is stated in some works on Natural History that redwings are the first to succumb to severe weather. As far as my experience goes, this has not been the case during the late severe frost and snow, for I have found fieldfares starved to death, generally in the vicinity of running water, but, so far, not a single redwing. During the frost the redwings subsisted, I believe, nearly entirely on snails, both the large common snail and the pretty variegated sort; judging from the broken shells, the number of the latter snails destroyed by redwings must be enormous. In a walk near the Humber the other day I saw several small flocks of redwings, and every prominent stone was strewn around with the broken fragments of snail-shells: I have lately on several occasions seen these birds hammering away against a stone. I do not think the fieldfares resort to the same diet, and have often watched to ascertain if they did so, but without avail; and had they been in the habit of feeding upon snails they would probably not have fallen victims to the frost. Owing to the absence of trees and bushes we have but few thrushes in this place. Redwings are, however, exceedingly plentiful, and must this season be especially fortunate, for the supply of snails is apparently inexhaustible.

Graylag Goose.—I have lately seen three small flocks of these geese in the grass fields near the Humber, numbering three, five and six birds.

Starlings.—Numerous and large flocks of starlings may be daily seen, during the winter months, busily feeding on the grass lands in the wide open district bordering the Humber. Two years since they always resorted for a night's lodging to a small plantation of spruce and larch; the same little covert which I have previously mentioned in the pages of the 'Zoologist' (Zool. 9448), as being now the favourite roosting-place of blackbirds and redwings. For an hour before dark on a winter's afternoon flock after flock, from every point of the compass, came dropping in, and forming at last one immense flock, numbering many thousands of birds. This large body, after wheeling repeatedly round the plantation; now dividing and subdividing into separate detachments, sometimes dashing off in a wide circuit half a mile away; now contracting into a dense mass, and again spreading out in a long straggling body, would finally rush down with a confused roar of wings and settle on the trees. Every branch was at once crowded with birds, all keeping up a continual chattering and fluttering in their endeavour to obtain a secure resting-place on the swinging and bending branches of the spruce and larch. Having once settled down, nothing would induce them, for that night at least, to forsake the friendly shade of the covert. Owing to the great damage done to the young trees by the droppings of the birds, it became necessary, much to my regret, to compel them to change their quarters, and to give them notice to quit; and it was very evident that, unless this was speedily done, the trees would be completely destroyed; as it was, the lower spruce boughs were thickly covered with their dung, a thick coating of which also covered the ground, mixed up with a confused mass of feathers, partly shed by the birds themselves, partly the remains of numbers which fell victims to hawks and owls. All vegetation on the ground under the trees was destroyed; and the smell, even on the outside of the plantation, was most offensive. In order to get rid of the starlings I had guns, loaded with powder alone, fired after sunset close to the covert side: on the report up rose the starlings in a body with a tremendous roar of wings; generally they would immediately settle again, but on repeated firing they would rise a few yards and fly round, never, however, going out of gunshot of the trees, and then settle again. The darker it became the less notice would they take of the firing, and at last would not rise at all. The next night the firing was repeated, and with the same result; after which, curiously enough, it had the desired effect; the next night the whole body of starlings forsook the covert, and have never since returned there for a night's lodging. Their present retreat must be at some distance from the village, as I know of no place within many miles so well adapted for a roosting-place as their late quarters. Flock after flock, numbering from twenty to thirty to many hundreds of birds, still nightly pass over this village, flying in a south-easterly direction and at the average height of about forty yards. On their return at daybreak to their favourite feeding-grounds they do not fly high, generally skimming along near the ground, rising above the tall hedge-rows and other obstructions in their line of flight and dropping again on the other side to near the ground. Early on the morning of the 20th of February, when out duck-shooting on the borders of the marsh district (I think I never before experienced a rougher morning walk), flock after flock of starlings passed me flying close to the ground, and going right in the teeth of a tremendous northerly gale, driving before it dense clouds of snow. Right in their line of flight two sparrowhawks were cruising backwards and forwards, like a pirate vessel and her consort in the line of the trade winds, but so great was the gale that the starlings never attempted to rise or deviate a yard from their course to avoid the hawks. Since writing the above I have read in the 'Zoologist' (Zool. 9499) that sparrowhawks are said not to feed on starlings. I have myself seen, in our marsh district, sparrowhawks in the pursuit of starlings, and have also frequently observed in the evening a pair of these birds beating about and flying down amongst the starlings in their former favourite roosting-place, the small spruce covert; and it is in this district no uncommon circumstance to find the spot where a starling has been devoured. I cannot, however, at this time recollect a single instance in which I have seen a sparrowhawk actually strike down and carry off one of these birds.

Water Rail.—During the late severe frosts I noticed a water rail feeding in an open drain bordering a railway, and close to a public road and station: it took little heed of anyone passing. When feeding it waded knee-deep into the shallow stream, jerking up its tail after the manner of a water hen, and constantly kept probing with its bill up to the very forehead in the mud, reminding me very much, in its mode of feeding, of a whimbrel. The water rail is a common bird in this neighbourhood.

Knot.—Although we have experienced an unusually severe season, and consequently might expect an increase in our winter visitants, yet I have known the knot visit us in much greater numbers than they have done this winter. They may generally, however, be seen from the beginning of November to March, in flocks numbering many hundreds of birds, on the dreary mud plains left by the receding tide. Invariably *half an hour* before dark they are on the wing, moving off to some favourite feeding-ground; flock after flock pass, all going in one direction. As they fly along close to the water's edge, rising and falling in their flight, and stretched out into a long straggling line, they look, in the deepening gloom, like the long trail of smoke left by a steamboat.

Fieldfare.—Fieldfares have suffered greatly from the late severe weather, and great numbers have perished. I frequently put them up on the open streams, squatted close down near the water, under the hollow bank: they would suffer a very close approach, flying for a few yards with a weak struggling flight, their feathers puffed out, and all the appearance of starvation. The other day I saw a hooded crow seize by the neck and fly off with a fieldfare, which was feeding by the side of an open drain: it carried it about two hundred yards, and then, alarmed by my appearance, dropped the bird: on going up to the spot I found it dead and bleeding from a wound in the neck: it was in miserably poor condition. From the many scattered feathers I have lately found on our drain-banks and the foot-marks of crows imprinted on the snow, I have reason to think that this is by no means a solitary instance, but that many thus fall victims to the "hoodie."

Common Wild Duck.—I have observed that the mallards, which during severe weather frequent the small streams in this parish, prefer the tender leaves of the small water crowfoot (*Ranunculus pantothrix*) and spring-water starwort (*Callitriche verna*) to all other plants, also the roots and stems of the common hornwort (*Ceratophyllum submersum*); quantities of the latter plant are pulled up by the ducks when feeding, and may be found floating on the water. I have seen the trailing stems of the crowfoot and starwort in our streams completely stripped of their leaves by ducks.

Wild Swan.—Several wild swans have been shot in this neighbourhood during the winter. One was killed on the 14th of February in a small stream in this parish: I did not see the bird myself, so am unable to say to what species it belonged: I was told it was a young bird and in very poor condition. I saw a wild swan which had been shot in the marsh hanging up in a game-shop in Grimsby the other day: it showed a large admixture of brown in the plumage: from its small size, black bill, and the *small portion of dirty gray* (not yellow) at the base of the bill and running up to the eye, I have no doubt it was an immature specimen of Cygnus Bewickii.

Great Blackbacked Gull.—This bird is not of unfrequent occurrence on the Humber flats. There is one particular point in this parish, where a small stream empties itself into the Humber, often flowing for some distance across the mud flat, where I seldom miss seeing a magnificent specimen of this gull, and I have had many a long look at him through my telescope. Either this bird or one of the same species has frequented this same spot during the winter months for several years, where its wild harsh cry or bark is quite in keeping with the lonely prospect. Owing to its extreme shyness the great blackbacked gull is rarely shot; the young birds are, however, not nearly so difficult to approach. I have frequently seen this bird give chase to and drive away the blackheaded gulls when in the vicinity of its favourite haunt. The other day, however, I saw the great blackbacked, herring, common and blackheaded gulls all feeding quietly within a few yards of each other. One of the blackheaded gulls had already (25th of February) resumed the black plumage on the head, while others were in the transition state.

JOHN CORDEAUX.

Great Cotes, March 2, 1865.

Peregrine Falcon and Merlin at Epworth.—On the 27th of February, 1865, I received a splendid and unusually large peregrine falcon, in the flesh: it was trapped in the neighbourhood of Epworth. Dissection proved it to be an immature female: the stomach contained the remains of a duck. Another bird, which had probably been paired to my specimen, has been seen in the neighbourhood since mine was trapped, but has hitherto escaped capture. On the 2nd of March a beautiful specimen of the merlin was shot in the vicinity of Epworth: it proved to be a mature female: I have never seen but one specimen of this falcon shot in this part of Lincolnshire.—*Henry Gravil; Epworth, Bawtry.*

Merlin near Salisbury.—A few weeks ago I saw, in the flesh, a beautiful specimen of the merlin: it was a male bird in exceedingly fine plumage, and was shot near Amesbury, eight miles from Salisbury. I recollect seeing a female bird of the same species that was killed at Amesbury last season. I have also seen at different times some very nice specimens of the hobby from the same locality: these birds are rarely met with about here except in that district.—*Henry Blackmore; Salisbury, February* 25, 1865.

Note on the Sparrowhawk.—I have a still more satisfactory proof than the one given in my last note (Zool. 9465) that these hawks are in the habit of removing their young if disturbed. One of the gamekeepers here, whose veracity I can vouch for, informed me that during last summer he found a nest of young sparrowhawks; he took one of them out, tied a string to its leg, which was fastened to a peg driven into the ground near the root of the tree, and set a trap beside it. Returning next day, he found the string broken in the middle, the hawk gone, and also the others in the nest. Not long after he found another nest with young hawks, one of which had a piece of string tied round its leg, thus leaving no doubt that these were the hawks removed from the first nest.—*William Brown, jun.; Wynyard Park, Stockton-on-Tees, February* 13, 1865.

Note on the Kestrel.—Two young birds of this species were brought to me last summer. I kept them tied by the leg to a wooden perch: on coming to look at them one day I found one of them loose, and the string, which was well knotted round the leg, undone. I caught the loose bird, tied it up again, making the knots very firm, and lay down behind a hedge to watch. After having settled on the perch, it began with its bill to unloose the knots, which, after a short time, it succeeded in doing. Both of them eventually managed to make their escape by this trick. They were also very fond of bathing in a bowl of water.—*Id.*

Snow Bunting at the Kingsbury Reservoir.—To-day, while walking round the reservoir at Kingsbury, my attention was attracted by a single light-coloured bird in company with some sky larks, meadow pipits, and one or two starlings, searching for food among the dead weeds and other refuse that have lately collected on the edge of the water. While flying the white in its wings and tail was very conspicuous. It was very shy, but at last, by a long shot, I succeeded in killing it, and I then recognized it as a snow bunting. It is an adult male in perfect plumage. I am not aware that the snow bunting has been seen here before.—*Charles B. Wharton; Willesden, Middlesex, February* 8, 1865.

Note on the Hooded Crow.—There is an unusual number of the Royston or hooded crow in the water-meadows of Britford, close to Salisbury, this year: there has been one, and one only, every winter for many years past about here, but this year seven or eight have been seen.—*Arthur P. Morres.*

Early Wren's Nest.—At Saxmundham, Suffolk, on the 27th of December, 1864, a nest containing two old and five young wrens (flyers) was found in a fence by one of Mr. Long's keepers: they were all captured, and have been preserved by a birdstuffer in the town.—*Edward Neave; Leiston.* [Were not these birds of the previous season?—*E. Newman.*]

Lesser Spotted Woodpecker near Salisbury.—Last week I had a female specimen of the lesser spotted woodpecker sent me from Britford. It was shot by a gentleman's gardener on an old walnut tree: there were two male birds at the same time with it, but these have not since been seen. Is this species generally considered rarer than the larger spotted woodpecker? I have met with several of the smaller sort in Berkshire, Somersetshire and Wiltshire, but I have never met with the larger.—*Arthur P. Morres.*

Anecdote of a Hen killing Mice.—The following observations have been communicated to me by the lady to whom the hen belongs, with permission to forward them for insertion in the 'Zoologist.' "A year ago I had given to me a cock and two hens of the white Dorking breed; one of the hens was accidentally poisoned, but the cock and the other hen I still have, and the hen lays regularly; but during the last six weeks she has taken to watch for and catch the mice, with which our yard is overrun. I did not believe what I had been told as to her doing this; but three days ago I went into the yard and saw a bit of my hen's white feather sticking out of a low bunch of heather and dead fern-stalks which is in one part of my fernery. The hen was *en cachette.* Presently I saw her head peeping out, and in another moment she pounced on a mouse, which was playing out of its hole, and killed it and brought it to my feet. I remained about the yard another twenty minutes, and again saw the hen catch a mouse in its beak and kill it with one blow of its bill on the head. The man who attends to the yard says that after killing the mice, the hen picks them to pieces, but does not eat them."—*J. H. Gurney; March* 1, 1865.

Moorhen perching in Trees.—On the 29th of December, when out shooting near Stratford Toney, Wiltshire, I sent a dog into a willow bed. The first bird flushed was a moorhen, and it was with some surprise that I saw it perch in a willow sapling, some ten feet from the ground. A few days afterwards, as I was walking through the same willow-bed, I observed the same thing. On my nearer approach the bird took to flight and I shot it. I have since observed this habit several times in this locality, but though I have had a good opportunity of studying the habits of the moorhen in former years, and in other localities, I never before observed it perch in a tree among twigs not more than half an inch thick.—*Joseph J. Armistead; Virginia House, Leeds, February* 2, 1865.

[Moorhens very commonly roost in trees: I have seen as many as a dozen at one time thus elevated: taking them at first sight in the dusk for rooks.—*E. Newman.*]

Carolina Crake near Newbury.—In October last I shot, on the banks of the Kennet, near Newbury, a Carolina crake (*Porzana carolina*). It was exhibited by Mr. A. Newton, of Magdalene College, Cambridge, at the Meeting of the Zoological Society on the 14th of February, who remarked on the fact of the species having also been met with so far from its usual range as Greenland, and also on the vagrant habits of some other Rallidæ; for instance, the common English corn crake, which has not only occurred once in Greenland, but also in the Bermudas, and several times on the eastern coast of the United States.—*H. S. Eyre; Newington, near Sittingbourne.*

Tufted Duck near Salisbury.—I have had three specimens of the tufted duck brought to me since Christmas, two males and one female, all of them shot in this immediate neighbourhood. Wild fowl have been less abundant with us this winter than usual.—*Henry Blackmore.*

Sclavonian Grebe at Worthing.—On the 7th of March, 1865, a gardener, who has the care of a walled-in garden on the outskirts of Worthing, on entering the garden, about nine o'clock in the morning, observed a bird, apparently asleep, with its head under its wing, near one of the garden-walks. On touching it with his foot it attempted to flutter away, but the gardener caught it, and having killed it, took it to Mr. Wells, birdstuffer, at Worthing. The bird proved to be a Sclavonian grebe, in full winter plumage: it was in very fair condition, and apparently quite uninjured. On dissection it was found to be a female, but the ova were but little developed, none being larger than a small pin's head and the majority considerably less. The stomach contained (as is usual in the grebes) several of the bird's own feathers, together with minute angular pebbles and a bright green vegetable substance apparently the remains of some very small aquatic plant, but no sign of any animal food.—*J. H. Gurney; March* 16, 1865.

Correction of a Misprint.—I take this opportunity of correcting a misprint in the number of the 'Zoologist' for the present month (Zool. 9468), where, in my notice of the purple sandpiper's occurrence at Lancing Water, the word "broadish" is erroneously applied to this pool, instead of "brackish," which was the term I used.—*J. H. Gurney.*

Proceedings of Societies.

ENTOMOLOGICAL SOCIETY.

March 6, 1865.—F. P. PASCOE, Esq., President, in the chair.

Donations to the Library.

The following donations were announced, and thanks voted to the donors:—'Proceedings of the Royal Society,' No. 71; presented by the Society. 'Linnæa Entomologica,' vol. 15, 'Entomologische Zeitung,' 1865, Nos. 1—3; by the Entomological Society of Stettin. 'The Naturalist,' Nos. 10—20; by the West Riding Consolidated Naturalists' Society. 'The Zoologist' for March; by the Editor. 'The Entomologists' Monthly Magazine' for March; by the Editors.

Election of Members.

Herbert Jenner, jun., Esq., of Hill Court, Berkeley, Gloucestershire, and the Rev. T. A. Marshall, M.A., of Hart Street, Bloomsbury, were elected Members. Richard Lydekker, Esq., of Harpenden Lodge, St. Albans, was elected an Annual Subscriber.

Prize Essays.

The President announced that, as an inducement to the study of Economic Entomology, the Council had determined to offer Two Prizes, of the value of Five Guineas each, to be awarded to the Authors of Essays or Memoirs, of sufficient merit, and drawn up from personal observation, on the anatomy, economy, or habits of any insect or group of insects which is in any way especially serviceable or obnoxious to mankind. The Essays should be illustrated by figures of the insects in their different states, and (if the species be noxious) must show the results of actual experiments made for the prevention of their attacks or the destruction of the insects themselves.

On former occasions the Council selected a definite subject, as *e.g.*, the Coccus of the Pine Apple, the larva of Agrotis Segetum (the large caterpillar of the turnip), &c. The consequence was, that competition was diminished or not called into play. On the present occasion, therefore, the selection is left to the candidates themselves, provided only that the subject be one fairly belonging to the Economic branch of Entomology.

The Essays must be sent to the Secretary at No. 12, Bedford Row, with fictitious signatures or mottoes, on or before the 31st December, 1865, when they will be referred to a Committee to decide upon their merits; each must be accompanied by a sealed letter indorsed with the fictitious signature or motto adopted by its author, and inclosing the name and address of the writer.

The Prize Essays shall be the property of, and will be published by, the Society.

Exhibitions, &c.

Mr. Bond exhibited specimens of a gall found on a willow tree near Cambridge; the tree was fifty feet high, and almost every twig appeared to possess its gall, which took the form of a premature terminal development of leaves in whorls, so as to resemble a flower-head. He had observed the galls only the day before the Meeting; the leafy excrescences were then dry and withered, and he was unable to state what was their colour when fresh.

Mr. W. W. Saunders remarked upon the similarity between this and the Swiss gall which he had exhibited at the Meeting of November, 1864 (Zool. 9377), in which, however, the leaf-like processes were not spread out, but were adpressed to the stem.

Mr. Bond also exhibited varieties of Colias Edusa and Vanessa Urticæ, both captured in Norfolk or Suffolk; each was remarkable from having the wings, particularly the hind wings, conspicuously blotched or suffused with dark patches.

Mr. T. W. Wood (who was present as a visitor) exhibited a variety of the male of Apatura Iris, captured in Kent; it was remarkable for the absence of the usual white markings on both the upper and under sides of the wings. He also exhibited a moth from Bahia, belonging to the family Arctiidæ, and supposed to be new to Science.

Prof. Westwood, referring to the exhibition at the previous Meeting of Major Cox's Acari, said that he had at the time called attention to the position during copulation of the small male, which anchored itself by means of its mouth upon the breast of the female; he had since found that De Geer had observed the same fact, and had figured it, but had misrepresented the position; the male appeared to continue *in situ* for a considerable time, in fact for several days. Major Cox's dogs must have been very recently worried by the ticks, as many of the specimens taken home by the Professor for examination were found to be full of blood. He had taken numerous eggs off a portion of the kennel, and one female was discovered full of eggs; there were also on the wood the shells of eggs which had hatched, the first skins of the larvæ, and various stages of the insect; in the first and second stages they were dull yellow and had only six legs; in the third stage they appeared to begin to suck, and though not larger than a well-sized pin's head, were distended with blood; in the fourth stage they had eight legs, the sexual distinctions became visible and sexual intercourse was carried on. The Cimex found on the wood had proved on examination to be a well-known insect.

The President mentioned that he had also taken home a pair of the Ixodes *in copulâ*, and had gummed the female down, in which position she had remained for a fortnight, at the end of which she was found in the act of walking away. He remarked upon the great vitality of female insects after impregnation and before the deposition of eggs.

The President read the following:—

A Note on Generic Names having nearly the same Sound.

"It frequently happens that I am called upon to defend the principle that no generic name ought to be changed simply because it has a near resemblance to another generic name of prior date. I have thought, therefore, that a short notice calling attention to the enormous evil involved in such changes, both as to the number of names that would have to be cancelled, and to the uncertainty as to what should be considered to be too near an approach to the older name, would be desirable. In such closely sounding words as *Cercus* and *Circus*, *Ectinus* and *Ectimus*, *Sypalus* and *Sipalus*, there could be no doubt; whether, having regard to our peculiar pronunciation, such names as *Lina* by the side of *Læna*, *Centor* by *Sintor*, or *Dignomus* by *Dinomus* would be admissible, would not be a question out of England. Few, too, would have any difficulty about *Pteroclus* and *Pterocles*, *Drapetes* and *Drapetis*, *Hephialtus* and *Ephialtes*, *Spondylis* and *Spondylus*, but some may hesitate as to *Lema* because of *Lemur*, *Harpalus* because of *Hapalus* or *Colotes* because of *Calotes*? Then would no one be found to assert that *Europs* was too close to *Euops*, or *Blax* to *Blaps*, or *Astycus* to *Astacus*. *Hyperion* has been found too near *Hyphæreon*.* Should we not also reject *Tychius* because of *Trichius*, *Frixus* because of *Phrictus*, *Typhæa* because of *Tiphia*? M. James Thomson ignores *Desmocerus* because of *Desmoderus*, *Orthostoma* because of *Orthosoma*, *Aphies* because of *Aphis*. But compare *Thysia* to *Thyrsia*, *Frea* to *Phæa*, *Nicias* to *Nysius*, *Ælara* to *Hilara*, and by the same standard we should reject them too. Then there are many names that, owing to a radically different spelling, may not have struck us as being similar in sound, such, for instance, as *Allæsia* and *Halyzia* (as well as *Alysia*), *Sitona* and *Cetonia*, *Lichas* and *Lycus*, *Enema* and *Anæma*, *Cyrtus* and *Syrtis*, &c. One great authority considers all names as practically identical which only vary in the termination. Thus *Ammobius* is sunk because of *Ammobia*, while to replace it we have *Ammophtorus*, notwithstanding that there is already an *Ammophorus*, and in the same family too. Following up this rule, what is to become of *Dromius* after *Dromia*, *Pachyta* after *Pachytos*, *Mycetæa* after *Mycetes*, *Pogonus* after *Pogonias*, and so on. What are the advantages to be derived from such changes? Ornithologists have no difficulty in using *Pica* and *Picus*, *Otis* and *Otus*, &c. It is bad enough to have to alter the names that are *absolutely* identical, and they are more numerous, I think, than is generally imagined. It will be seen that I have entirely confined myself to the Coleoptera, as being better known, in the names I have quoted that will require to be cancelled, if the principle I contend against should be adopted. A word or two as to making slight alterations to render, I presume, names more classical. This, I think, ought not to be done except when some very gross error has been committed, as in the celebrated *Spavius* case. Dr. Kraatz has just used the word *Melarachnica* avowedly because the more correct form would be too long. On the other hand, Mr. Crotch, in his 'Catalogue,' changes *Emus* of Leach to *Emys*, but Leach, probably, very well knew that this form of the word had been already appropriated to a genus of tortoises. Mr. Crotch, therefore, must either coin a new word or go back to the old one. Is there anything but confusion likely to follow such alterations?"

Prof. Westwood thought it unadvisable to change generic names on the ground discussed by Mr. Pascoe, or indeed on any ground except the precise identity of the two appellations. He had, thirty years ago, compiled a catalogue of all the generic names then published, and in so doing he had made numerous alterations in the forms given by the authors thereof, either because the names were too near to others of prior date, or because they were not classically formed, or for other reasons which then appeared to him sufficient. That Catalogue was still in MS., but if it ever should be published, his experience had led him to the conclusion that the proposed alterations ought to be rejected, and that for the avoidance of confusion, the original names, even if not quite classical, ought to be retained. Even where two generic names were precisely identical, not only in sound, but in spelling, he thought some modification of the rule, as now generally understood, was admissible; he did not think it necessary that the name of a genus of insects should be sunk and another substituted in its place merely because it was subsequently discovered that the same name had been previously applied to a genus of plants, birds or fishes; it was sufficient if the same generic name did not occur in duplicate in the same class of the animal kingdom.

---

* Prof. Westwood changed the first of these names to *Campylocnemis*, under the idea that it had been previously used; Mr. Macleay's genus, however, was *Hyphæreon*.

Mr. W. W. Saunders thought that botanists had now abandoned the practice of altering the names of genera of plants on the ground that such names had been previously used for zoological genera.

Prof. Westwood directed attention to a translation, in the March number of the 'Annals and Magazine of Natural History,' of a paper by Schiödte on the Classification of Insects, and in which the author compared the merits of Fabricius and Latreille as philosophic classifiers, his conclusion being strongly in favour of the former. The Professor combatted this view, and vindicated the scientific and philosophic eminence of Latreille.

The President, whilst admitting the ability of the author, also criticized the paper in many of its details, as *e.g.*, where the author sets aside all the primary characters whereby the Prionidæ are at once distinguished, for the purpose of establishing a character in the stipes of the maxillary palpi, which is said to be moveable, but the adoption of which character served only to group insects together which were, in fact, widely separated, and thus to produce an unnatural arrangement; and again, where the author argues in favour of the lamellæ of the antennal club of the Lamellicorns being a modification of hairs. Moreover, Schiödte's observations appeared to be made for the most part on the very limited fauna of Denmark.

Paper read.

Mr. M'Lachlan read "Trichoptera Britannica; a Monograph of the British Species of Caddis-flies."

In this paper, the result of five years' study of the group, the author gives detailed descriptions of 124 species, arranged in 43 genera, and full accounts of the habits of the same, so far as they are known to the present time. Stephens, in his 'Illustrations' (1836-37) described no less than 183 so-called British species; but some species were there given under as many as six different names, and the two sexes of the same insect were not unfrequently placed in different genera or sections. The number was reduced to 108 by Dr. Hagen in his Synopsis of the British species published in the 'Entomologists' Annual,' 1859—61, the true number known at that time being probably under one hundred. The difference between that number and the 124 species now enumerated represents the additions to our Trichopterous fauna during the last four or five years.—*J. W. D.*

5 AP 65

THE ENTOMOLOGIST

IS

A Popular Monthly Journal of British Entomology,

Published at 6d. each number; or 6s. a year,
the POSTAGE PREPAID.

☞ Subscriptions may commence either on the 1st of JULY or the 1st of JANUARY, at the option of the subscriber, and will always include thirteen sixpenny numbers.

The objects of the 'Entomologist' are:—

1st. To preserve a continuous record of captures in every part of the kingdom: the earliest possible notice of these is most earnestly requested.

2nd. To improve collections, more especially of BRITISH LEPIDOPTERA, by the free communication of specimens: for this purpose ample Lists of Duplicates and Desiderata are admitted without any charge.

3rd. To publish Critical Notes and revised Descriptions of BRITISH COLEOPTERA; also Life-histories of British Insects, having especial reference to those injurious to the Farm and Garden.

4th. To give all Entomological News that can be considered of general interest, including Reports of Meetings.

⁂ I shall feel personally indebted to those gentlemen who approve these objects, if they will promote the sale of the 'Entomogist' by every means in their power; for although it will be continued for public benefit, and totally irrespective of profit or loss, still I hold that every periodical should be self-supporting.

The 'Entomologist' is open to all contributors: nothing tending to give instruction and information will be rejected; but the following regulations must be implicitly observed:—

i. The writer's real name and address must be given for publication whenever *fact is communicated;* but no name, or reference of any kind, is required when a question is asked, and the object of the querist is simply to elicit information.

ii. No personal, offensive, or even unkind observation must be used in alluding to the writings of others; but free expression of opinion is allowed whenever one observer differs from another on a question of fact: truth is the great desideratum, but truth can and must be couched in terms of courtesy.

Printed and Sold by EDWARD NEWMAN, 9, Devonshire Street, Bishopsgate, London, to whom all communications must be made, and all subscriptions paid.

Sold also by JOHN VAN VOORST, 1, Paternoster Row, London; and by all respectable Booksellers in Town or Country.

CONTENTS.

Reptiles.—Observations on Coronella austriaca, *Dr. Edward Opel*, 9505. Snakes i New Granada, *Henry Birchall*, 9512.

Insects.—Collecting Bogotà Papilionidæ, *Henry Birchall*, 9512. Description of th Larva of Ennomos fuscantaria, 9513. Description of the Larva of Nonagria Typh 9513.

Quadrupeds.—Notes on the Wild Cattle at Cadzow, *Edward R. Alston*, 9514. Ba flying at Midsummer, *Thomas Bell, V.-P.L.S., &c.*, 9517. Otter near Salisbur Common Hare, *Henry Blackmore*, 9517. Common Hare, *Rev. Arthur P. Morr* 9517. The Sloth, *Henry Birchall*, 9517.

Birds.—Ornithological Notes from Shetland, *Henry L. Saxby, M.D.*, 9518. Ornitho-logical Notes from Beverley, East Yorkshire, *W. W. Boulton*, 9527. Ornithological Notes from Lincolnshire, *John Cordeaux*, 9532. Peregrine Falcon and Merlin a Epworth, *Henry Gravil*, 9538. Merlin near Salisbury, *Henry Blackmore*, 953 Note on the Sparrowhawk; Note on the Kestrel, *William Brown, jun.*, 953 Snow Bunting at the Kingsbury Reservoir, *Charles B. Wharton*, 9539. Note o the Hooded Crow, *Rev. Arthur P. Morres*, 9539. Early Wren's Nest, *Edwar* *Neave*, 9539. Lesser Spotted Woodpecker near Salisbury, *Rev. Arthur P. Morr* 9539. Anecdote of a Hen killing Mice, *J. H. Gurney, M.P.*, 9539. Moorhe perching in Trees, *Joseph J. Armistead*, 9540. Carolina Crake near Newbur *H. S. Eyre*, 9540. Tufted Duck near Salisbury, *Henry Blackmore*, 954 Sclavonian Grebe at Worthing, *J. H. Gurney, M.P.*, 9540.

Proceedings of Societies.—Entomological Society, 9541.

Changes of Address.—After February 18, 1865, Edwin Birchall, from Birken-head, to No. 10, Chester Street, Bradford.

Trovey Blackmore, from The Hollies, to No. 10, High Street, Wandsworth.

RAY SOCIETY, instituted 1844, for the Publication of Works o Natural History.

Annual Subscription, One Guinea.

Two Volumes will be issued to the Subscribers for the year 1865.

Subscriptions for 1865 are now due, and will be thankfully received by

H. T. STAINTON, F.L.S., F.G.S.,
Secretary.

Mountsfield, Lewisham, near London, S.E.

BIRDSNESTING; being a complete Description of the Nests an Eggs of Birds which breed in Great Britain and Ireland. By EDWAR NEWMAN, F.L.S., F.Z.S.—Price 1s. 1d., post free.

SUGGESTIONS FOR FORMING COLLECTIONS OF BIRDS EGGS. By ALFRED NEWTON, Esq., M.A.—Price 7d., post free.

Please make Post-Office Orders payable *to* Edward Newman, 9, Devonshire Stree Bishopsgate, N.E., and *at* the Bishopsgate Money-Order Office.

London: Edward Newman, Printer, 9, Devonshire Street, Bishopsgate, N.E.